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RESPONSE UNDER 37 C.F.R. § 1.116
EXPEDITED PROCEDURE
GROUP 2828
PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Toshiro HAYAKAWA

Application No.: 09/840,025

Confirmation No.: 4254

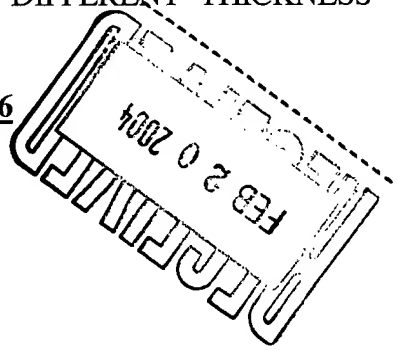
Filed: April 24, 2001

Docket No: Q64226

Group Art Unit: 2828

Examiner: Cornelius H. Jackson

For: SEMICONDUCTOR LASER MODULE HAVING OPTICAL WAVELENGTH CONVERSION ELEMENT AND SEMICONDUCTOR LASER ELEMENT WHICH INCLUDES QUANTUM-WELL SUBLAYERS HAVING DIFFERENT THICKNESS AND/OR COMPOSITIONS



RESPONSE UNDER 37 C.F.R. § 1.116

MAIL STOP AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the Office Action dated November 4, 2004, please consider the remarks as submitted herewith on the accompanying pages.

REMARKS

Takano discloses an active layer structure including an electroluminescence section and a carrier accumulation section which has a different band gap energy from that of the electroluminescence section so as to suppress the active wavelength chirping. In addition to the operation of the laser in Takano in no way suggesting the concept behind the present invention, Applicant respectfully submits that Takano and Sonoda would not be combined in the manner

suggested by the Examiner. The λ/4-shifted grating 9 in Takano is a distributed feedback (DFB) structure, defining the oscillation band of the Takano laser. Combining Takano and Sonoda undermines the principle of operation of Sonoda of selecting an oscillation wavelength of the semiconductor laser to match the period of the domains of the conversion element.

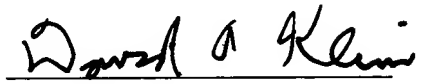
One of ordinary skill in the art would not look to the frequency-locking mechanism of Sonoda (*i.e.,* external resonator and band-pass filter) to phase match the output of the laser of Takano with periodicity requirements of the optical wavelength conversion element, since the output of Takano is already locked. Based upon the teachings of the art of record, there is no suggestion as to why it would be desirable to attempt to utilize the added complexity of Sonoda's external resonator with the frequency-locked DFB laser of Sonoda.

Further, Applicant submits that there would be no motivation to modify Takano to operate without the DFB structure. The laser of Takano requires the DFB structure for its principle of its operation. It is the DFB structure that prevents the accumulation section of Takano from electroluminescing. If the accumulation section were to electroluminesce, the carriers provided by the carrier accumulation section would not be available to the electroluminescence section of the active layer, thereby undermining the prevention of chirping--which is the entire reason the carrier accumulation section exists in the first place.

In view of the above, reconsideration of this application is believed to be in order, and such actions is hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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